## C5.3 Haunches

Note that there have been many adjustments in haunch policy, not all of which were made through the Methods Memos listed in this section of the commentary.

### C5.3.1 General

#### C5.3.1.1 Policy overview

**Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges**
**28 August 2002**

#### C5.3.1.2 Design information

#### C5.3.1.3 Definitions

#### C5.3.1.4 Abbreviations and notation

#### C5.3.1.5 References

### C5.3.2 PPCB bridges

#### C5.3.2.1 Analysis and design

**Methods Memo No. 26: Haunch Reinforcement for PCBM**
**24 July 2003**

**Methods Memo No. 115: Revised Haunch Policies (This memo made changes to MM Nos. 62 and 89.)**
**4 August 2005**

Diagrams for CWPG bridges have been moved to C5.3.3.2.

## Haunch Policy Summary ~ 21 August 2013

| Policy Item | PPCB (A-D and BTB-BTE beams) | CWPG and RSB |
|---|---|---|
| Shear steel and shear connectors | Shear steel projects above top flange 4.5 inches (115 mm) for A-D, 5.0 inches (125) for BTB-BTE. See Options (1) and (2) for special cases [BDM 5.3.2.1].<br><br>Min. embedment in deck 2.5 inches (65 mm) [BDM 5.3.1.1, 5.3.2.1, MM No. 62]<br><br>Min. cover from top of deck to top of shear steel 2.5 inches (65 mm) [BDM 5.3.2.1, MM No. 115] | Shear stud heights for selection are 3½, 4, 5, and 6 inches (90, 100, 125, and 150 mm) [BDM 5.5.2.4.1.8].<br><br>Min. embedment in deck 2.0 inches (50 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 115]<br><br>Min. cover from top of deck to top of shear stud 2.5 inches (65 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 115]] |
| Design haunch | Min. at edge of top flange 0 inches (0 mm) and preferred min. at centerline 0.5 inches (13 mm) [BDM 5.3.2.1]<br><br>Max. at centerline 3.0 inches (75 mm); see Options (1) and (2) if haunch exceeds 2.0 inches (50 mm) [BDM 5.3.2.1]. | Min. at edge of top flange 0 inches (0 mm) and preferred min. at centerline 0.5 inches (13 mm) [BDM 5.3.3.1, 5.3.4.1]<br><br>CWPG: Max. at centerline 2.0 inches (50 mm) [BDM 5.3.3.1, 5.5.2.4.1.8]<br><br>RSB: Max. at centerline 3.0 inches (75 mm) [BDM 5.3.4.1] |
| Field haunch | Max. embedment at edge of top flange 0.5 inch (13 mm) [BDM 5.3.2.1, MM No. 62]<br><br>Max. haunch at centerline 3.5 inches (90 mm) [BDM 5.3.2.1] | Max. embedment at edge of top flange 0.5 inch (13 mm) [BDM 5.3.3.1, 5.3.4.1, MM No. 62]<br><br>Max. haunch at centerline 3.5 inches (90 mm) [BDM 5.3.3.1, 5.3.4.1] |
| Detailing | OBS SS 1065 ”Slab Thickness Details” [BDM 5.3.2.2, MM No. 62]<br>• “Beam Camber Data”<br>• “Slab Thickness at Beams (T)”<br>• “Slab Thickness Details<br><br>OBS SS 1066 “Slab Haunch Data Details” [BDM 5.3.2.2, MM No. 62]<br>• “Table of Beam Line Slab Haunch Elevations”<br>• “Miscellaneous Data Table”<br>• A note for “Haunch Locations”<br>• “Haunch Detail” | CWPG: Non-standard sheet [BDM C5.3.3.2, MM No. 115]<br>• “Dead Load Deflection Diagram”<br>• “Girders as Fabricated Horizontally”<br>• “Theoretical Haunch Diagram”<br><br>CWPG: OBS SS 4305, 4308, 4309, or 4310 [BDM 5.3.2.2, MM No. 115]<br>• “Typ. Slab & Haunch Detail”<br><br>CWPG: OBS SS 1066 “Slab Haunch Data Details” [BDM 5.3.3.2, MM No. 62]<br>• “Table of Beam Line Slab Haunch Elevations”<br>• “Miscellaneous Data Table”<br>• A note for “Haunch Locations”<br>• “Haunch Detail”<br><br>RSB: OBS SS 5252 series “Misc. Details” [BDM 5.3.4.2]<br>• “Beam Camber”<br>• “Haunch Thickness Diagram”<br>• “Typ. Slab & Haunch Detail”<br><br>RSB: OBS RS40-061-10 series “Beam Deflections” [BDM 5.3.4.2]<br>• “Dead Load Deflection Diagram”<br><br>RSB: OBS SS 5264 series “Beam Line Haunch Data” [BDM 5.3.4.2]<br>• “Table of Beam Line Haunch Elevations”<br>• “Miscellaneous Data Table”<br>• “Haunch Detail” |

## C5.3.2.2 Detailing

**Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges**
**28 August 2002 (Manual text changed provisions of this memo on 14 July 2005.)**

## C5.3.3 CWPG bridges

## C5.3.3.1 Analysis and design

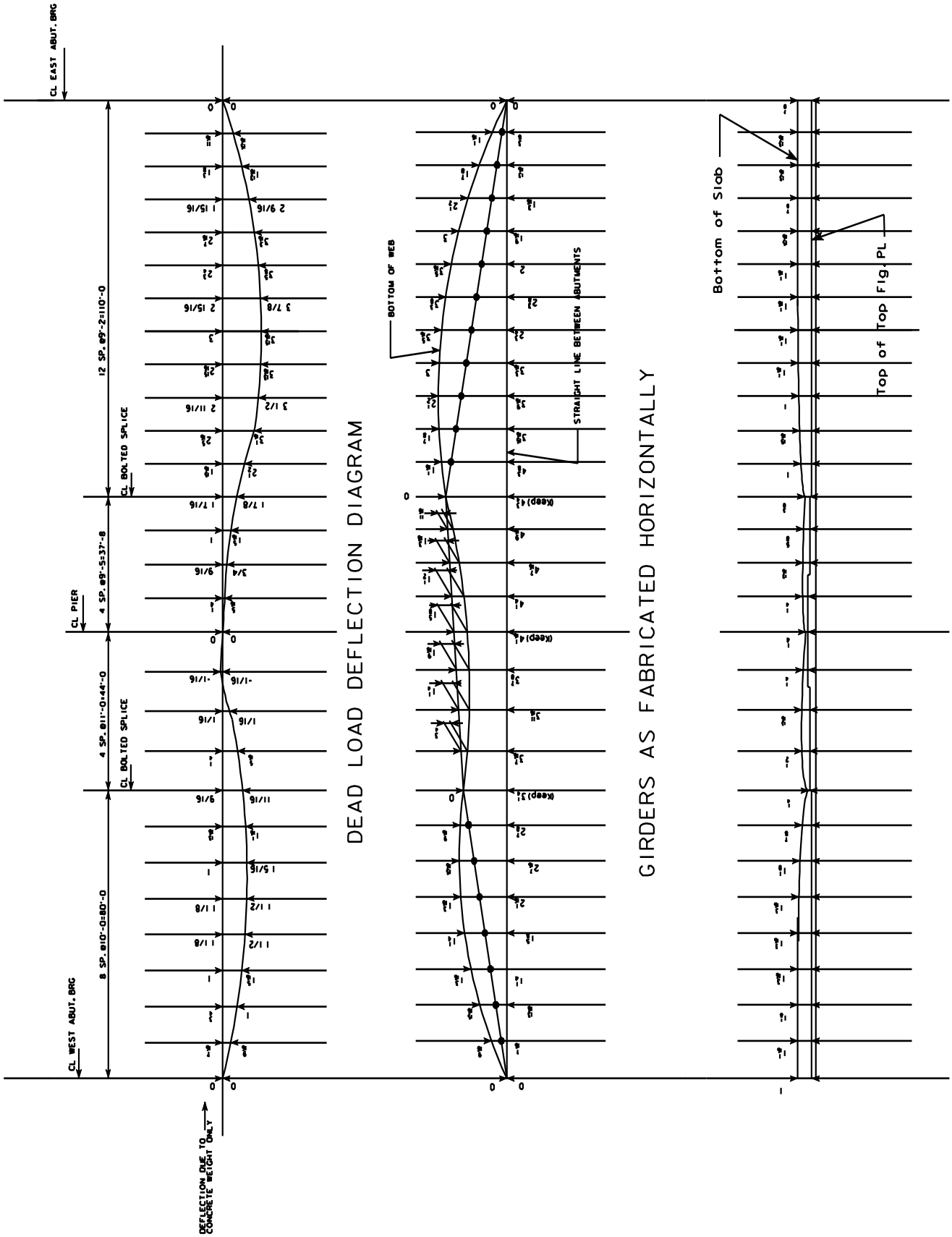
**Partially revised: Methods Memo No. 89: Shear Stud Lengths and Haunch Requirements for Steel Girders**
**26 January 2004**

**Methods Memo No. 115: Revised Haunch Policies**
**19 May 2005**

## C5.3.3.2 Detailing

**Methods Memo No. 115: Revised Haunch Policies**
**19 May 2005**

The three example diagrams shown below are for a two-span CWPG bridge. The designer should develop the diagrams using spacing intervals consistent with the intervals of the "Top of Slab Elevations" view for the bridge.


CL EAST ABUT. BRG
12 SP. @9'-2=110'-0
CL BOLTED SPLICE
4 SP. @9'-5=37'-8
CL PIER
4 SP. @11'-0=44'-0
CL BOLTED SPLICE
8 SP. @10'-0=80'-0
CL WEST ABUT. BRG
DEFLECTION DUE TO CONCRETE WEIGHT ONLY
DEAD LOAD DEFLECTION DIAGRAM
BOTTOM OF WEB
STRAIGHT LINE BETWEEN ABUTMENTS
GIRDERS AS FABRICATED HORIZONTALLY
Bottom of Slab
Top of Top Flg. PL
THEORETICAL CONCRETE HAUNCH DIAGRAM

**Partially revised: Methods Memo No. 62: Beam Line Haunch Elevations for PPCB and Steel Girder Bridges**
**28 August 2002**

## C5.3.4 RSB bridges

### C5.3.4.1 Analysis and design

**Methods Memo No. 115: Revised Haunch Policies**
**19 May 2005**

### C5.3.4.2 Detailing